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ABSTRACT

This document discusses the curriculum model for the Saskatchewan Institute of Applied Science and Technology (SIAST). Curriculum development is a vital part in educating adults for employment, especially since adult students have such diverse needs, backgrounds, and interests. Economics, demographics, and technology are all issues that push toward an increased demand for responsiveness in education. SIAST has designed a curriculum model to address these changing needs, with two main components: curriculum structure and curriculum process. Curriculum structure includes programs, courses, and outcomes. Curriculum process is comprised of five interrelated phases: analysis, design, development, delivery, and evaluation. SIAST looks at curriculum development as a major investment and believes that this type of curriculum can be shared between programs through clustering (grouping programs together that have similar occupational outcomes), coring (organizing programs as common courses), and standardization (delivery of courses at more than one location, with pre-determined standards). This document also describes key indicators for annual review and annual self assessments that will be monitored by deans. This review process would be guided by factors such as admission, student recruitment, learning outcomes, program content, stakeholder satisfaction, and growth/renewal. Together, the annual review of key indicators and the self assessment will replace the previous 5-year comprehensive program review. (CJW)

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SIAST Curriculum Model

June 1999

Department of Planning, Research, and Development

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SIAST Curriculum Model (June 1999)

Introduction

Curriculum development, production and delivery play an essential role in SIAST's mandate to train and educate adults for employment. Today, new challenges are forcing us to examine the overall programming process due to the diverse needs, interests and backgrounds of adult learners. Individual learners must be given the opportunity to tailor learning experiences to suit personal needs, and thus must have access to a variety of resources whenever and wherever they are required. Economic restructuring, demographic shifts and technological changes have placed increased demands on skill development for people entering and already in the labour force. This calls for increased flexibility in program delivery to ensure responsiveness to learner and industry needs, use of technologies for instruction on and off campus to extend access, and better integration across occupational fields. We need a curriculum model that can address these changing needs.

Rationale for Having a Common Curriculum Development Model

The Program Renewal Task Team Report [June,1998] identifies the following compelling reasons for a common SIAST Curriculum Model:

- X The articulation and communication of a shared vision and set of values.
- X The establishment of standards for program evaluation.
- X Simplification and clarification of organizational processes.

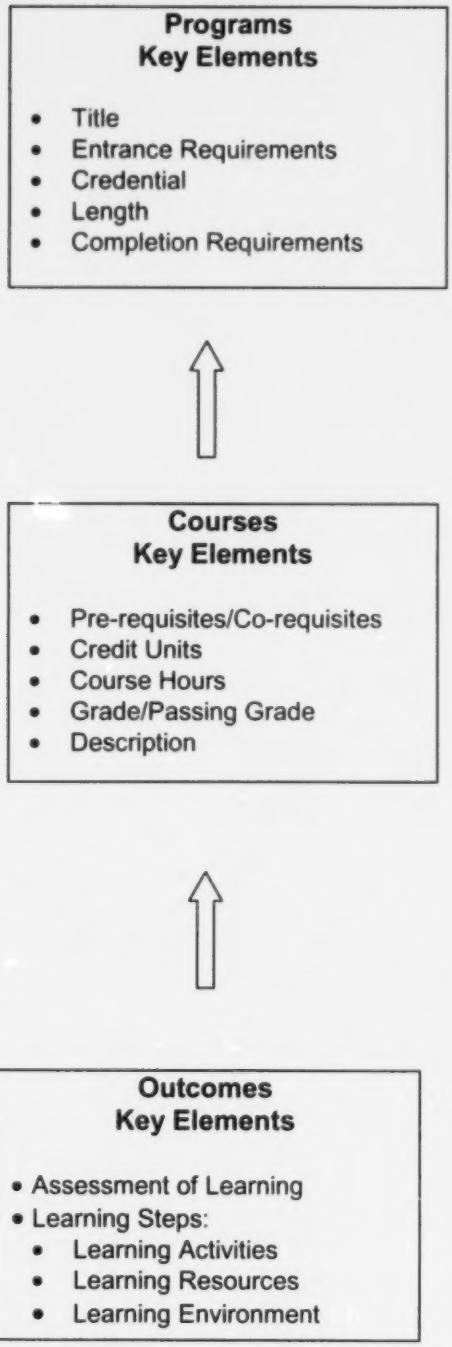
This proposed model is comprised of two main components:

1. Curriculum structure: all the necessary elements of a program curriculum (Part 1 of this document.)
2. Curriculum process: the process used to create, deliver, and evaluate the curriculum (Part 2).

Part 1: Curriculum Structure

The program model at SIAST will be comprised of several key components: (a) learning outcomes which are comprised of learning steps; (b) courses which are comprised of learning outcomes; and, (c) programs which are comprised of various courses. Figure 1 on the next page illustrates this structure.

Figure 1 - Structure of SIAST Programs



Learning Outcomes

Learning outcomes are the basic building blocks of the curriculum structure. *The learning outcomes also provide a common language that can guide designing curriculum, setting standards for assessment, and promoting portability of credits.* In order to provide for customized and individualized education, each learning outcome requires specific components that help to facilitate the learning experience, irrespective of the instructional delivery method that is used. By including these components, learning outcome(s) from one course can be combined with learning outcome(s) from another course to enable customization.

The purpose of learning outcomes is to identify the knowledge, skills and/or attitudes that the student will demonstrate upon completion of a course. They are stated in terms of the capability that the learner is expected to possess. Learning outcomes define the "what" of the course, and are essential irrespective of whether the course is theory or skill based.

The key elements of a learning outcome include the following:

- *Assessment of Learning*
- *Learning Steps*

Assessment of Learning

Learning outcomes *will be assessed (but not necessarily through specific assessment for each outcome). This assessment will* culminate in the final course grade which becomes part of the permanent student record. *As well, each learning outcome will be listed on BANNER or some other suitable database.*

Students enrolled in SIAST courses are assessed to determine whether they have acquired the knowledge, skills and/or attitudes identified for each learning outcome. Assessment of student skills, knowledge and attitudes is an essential part of accredited vocational and technical education. It occurs in several ways including the following: a) formal written or oral examinations; b) research papers or essays; c) shop or laboratory assignments; d) observed work procedures and task completion in shop, laboratory, clinical or on-the-job placement environments; e) case studies; f) simulations; and g) portfolio assessment. *This model does not limit the range of assessment strategies used by instructors. For some assessments, especially for performance-type outcomes, standards and critical factors need to be developed to guide the assessment.*

Prior Learning Assessment [PLA] allows students to challenge SIAST courses for credit based on learning acquired from work experiences and other informal processes. Credit may be granted to students who can demonstrate that their experiential learning meets the course learning outcome standards. Full credit for courses may be obtained. Students are required to demonstrate their learning through a variety of assessment methods.

Learning Steps

In order to deliver learning outcomes effectively, the learning outcome may be sub-divided into learning steps which indicate " how" the learning will take place. The purpose of learning steps is to help organize the information, the instructional events and activities. Learning steps state the knowledge and the behaviors that are necessary to achieve the learning outcome. Each learning step has its own learning resources and learning activities. Usually, there is no formal assessment of the individual learning steps, and no tracking on BANNER, although the instructor may track assessment results *at the program level.*

Learning steps would include the following:

- *Learning Activities:* Each learning step includes activities that are designed to help the learner achieve the learning step. The learner is presented with new knowledge or skill required to attain the learning step. The instructor must decide how the learning material will be delivered, and try to vary the instructional strategies to accommodate a variety of learning styles. Learning activities may include attending demonstrations, work exercises, completing assigned readings, case studies, projects, role playing, simulated labs, field visits, using computer assisted instruction, group discussion, etc. Besides a time for presenting new knowledge and skills to the learner, learning activities should provide the learner with an opportunity to apply/practice the learning, and an opportunity for prompt learner feedback concerning success.

- *Learning Resources:* Each learning step identifies learning resources designed to allow the learner to achieve the learning step. These include a wide range of human, physical, audiovisual, and electronic resources. For each learning step, one or more learning resources should be selected. Learning resources include the instructor, print based materials and a variety of multimedia resources.

- *Delivery Mode:* The delivery mode for each learning step will depend on "how" learners receive their education/training. Learning may take place within the educational institution, through distance education, or via work-based training. Analysis of the learner's needs and assessment of the training environment will determine the possibilities and the parameters for organizing the learning.

Course

The next major component in the curriculum structure is the course. Each course is a defined collection of related learning outcomes that serve as the basis for instruction and learning assessment. Each course is a distinct stand-alone unit of instruction. Upon completion of the course a grade is placed in the student's permanent record. A program may be comprised of required courses and elective courses. This provides for consistency and accountability as well it promotes flexibility and local adaptation. A course may also be used for several different program credentials. (See Appendix A for more information on clustering, coring and standardization.)

In addition to learning outcomes (previously described) and a course title, the key elements of a course include the following:

- *Pre-requisite*: A requirement that needs to be completed prior to a student taking the course.

- *Co-requisite*: A requirement that needs to be completed at the same time that the student is taking the course.

- *Credit Unit*: A measure of course value or weighting based on hours of instruction. (Note: Instruction, at this point, is measured based on the time spent in a traditional face-to-face instructor led activity.)

- *Course Hours*: The total number of instructional hours for the course.

- *Grade/Passing Grade*: The grade is the formal result of the assessment of learning that is placed in the student's permanent record. The grade is based on the accumulated results of assessment of the course's learning outcomes. *The grade could be a numerical mark or a grade code such as complete or incomplete.* The passing grade is the minimum grade required to obtain credit for the course. *A grading mode (how the grade is determined) may also be included.*

- *Description*: A narrative of the general purpose of the course and a listing of all the learning outcomes.

- *Other factors: There are some other factors that are required by BANNER or the registration system. These include: identifier code, sector code, department responsible for maintaining the curriculum, possible delivery modes, equivalent courses, etc.*

Program

The final component in the curriculum structure is the program. A program is a defined set of related courses and other requirements leading to one or more specific credentials. For example, the Early Childhood Education program contains courses which lead to either a certificate or a diploma.

In addition to courses, the key elements of a program include:

- *Title*: The title identifies the specific program for purposes of awarding the credential and also for marketing the program to prospective students and other stakeholders.

- *Entrance requirements*: requirements determined to be both necessary and sufficient for a student to be successful in the program. These requirements may include: secondary grade level, specific secondary courses and marks, and other relevant factors.

- *Credential(s)*: Completion document that provides formal recognition by an authorized educational institution or certifying body that the student completed all the requirements of a specific program (from policy #319).

- *Length*: The overall length that is determined by the number of courses and course hours. The course length is a key factor in the determination of the type of credential that is awarded for the program.

- *Completion requirements*: all requirements that a student must complete in order to receive a credential. Requirements will include some or all of the following: passing grade in all courses, additional cumulative average of all course marks, other non-course related requirements.

Sample Curriculum Structures

Two examples of curriculum structures are presented on the following pages. One theory-based example is from Chemical Dependency program within the Community Services Division. The other skill-based example is from the Truck and Transport Mechanical Repair program within the Industrial Training Division.

Program CHEMICAL DEPENDENCY	• **Title** – Chemical Dependency • **Entrance Requirements** - 17 years of age; completion of *Ten Steps to Successful Enrollment*; score of 11.5 in reading comprehension and written communication on CTBS; assessment for chemical dependency; and security clearance • **Credential** – Certificate or Diploma • **Completion Requirement** – Successful completion of all courses and practicum • **Length** – 52 weeks (Diploma) or 28 weeks (Certificate)
Course (CDEP 138) Effects on the Family	• **Pre-requisite** – CDEP 136, Chemically Dependent Persons • **Credit Units** – 7.0 • **Course Hours** – 165.0 • **Grade/Passing Grade** – 80% on each learning outcome (on a written test). • **Description** – This course reviews how a chemical abuser affects others. Specific topics such as relationships, co-dependency, child abuse and ACOA's are discussed.
Learning Outcomes For CDEP 138	• Describe family systems theory. • Describe the cycle of abuse. • Identify sexual abuse/assault and family violence behaviours and characteristics. • Describe the relationship between family violence, sexual abuse/assault and chemical dependency. • Describe the impact and warning signs of sexual abuse/assault and family violence. • Discuss co-dependence. • Describe the effects of the chemical abuser on the children. • Describe adult children of alcoholics. • Describe the effects of the chemically dependent adolescent on parents. • Identify how life with a chemical abuser affects the family.
Learning Steps For Learning Outcome *Describe family systems theory*	• Define family. • Examine family structures. • Examine family challenges. • Examine family rights and responsibilities.
Learning Activities For Learning Step *Examine family rights and responsibilities*	• Study an Instruction Sheet. • Complete a written assignment. • Participate in a group discussion.
Learning Resources For Learning Step *Examine family rights and responsibilities*	• Instruction Sheet *Healthy Families and Responsibilities.* • Written Assignment *Generational Problem Checklist.*
Delivery Mode For Learning Step *Examine family rights and responsibilities*	• On-campus: *instructor with learning guides*

Program TRUCK AND TRANSPORT MECHANICAL REPAIR	• **Title** – Truck and Transport Mechanical Repair • **Entrance Requirements** - Minimum score of 9.5 CTBS Level 16 or Grade 12 with English A30, B30 and Math A30. • **Credential** – Certificate • **Completion Requirement** – Successful completion of all courses • **Length** – 32 weeks
Course (SHOP 140) Use Shop Tools	• **Pre-requisite** – None • **Credit Units** – 3.0 • **Course Hours** – 75.0 • **Grade/Passing Grade** – 80% for *written tests; mastery level for performance tests using performance standards* • **Description** – In this course, the student will learn to identify and use basic tools, and become familiar with the common seal and bearing types used in the commercial transport industry.
Learning Outcomes For SHOP 140	• Identify shop tools and equipment. • Use measuring instruments. • Use lifting and blocking equipment. • Use cleaning equipment. • Use basic metal working tools. • Repair thread. • Service shop equipment. • Identify seals and sealants and their applications. • Identify bearings and their applications. • Use pressing and pulling equipment. • Use a tubing cutter and flaring tools.
Learning Steps For Learning Outcome *Repair Thread*	• Describe fasteners and their use. • Describe taps and procedures for their use. • Describe dies and procedures for their use. • Identify fasteners and thread-making tools and procedures for their use.
Learning Activities For Learning Step *Describe dies and procedures for their use*	• Study a textbook reading. • Attend an instructor presentation. • Complete a shop exercise.
Learning Resources For Learning Step *Describe dies and procedures for their use*	• Pages 99-102 in *Automotive Tools, Fasteners and Measurements*. • Shop Exercise *Use Dies*.
Delivery Mode For Learning Step *Describe dies and procedures for their use*	• On-campus: *Instructor with learning guides.*

Part 2: Curriculum Process

Curriculum development and delivery is part of a larger strategic program planning process. In this planning process, various activities must occur before a program moves into the curriculum process. These activities include: needs assessment both general (provincial and local) and specific (targeted labour market or audience); feasibility assessments, resource priority setting, etc. These activities may contribute to the development of the SIAST business plan and budget or be conducted as a result of the direction of the business plan.

For example, needs assessments involve collecting and analysing information to answer questions such as: Who would employ the graduates of the program? How many graduates are likely to be employed? What types of skills, knowledge and attitudes do employers require? How much student interest would there be in the program?

Results of these planning activities are also veted through an academic review and approval process. In the approval process, proposals are reviewed for academic soundness and quality and for resource implications and feasibility. Once a proposal has been approved, the program can begin the curriculum process.

The SIAST curriculum process is based upon a generic model that is known as ***Instructional Systems Design***. Instructional Systems Design forms the basis of many models of curriculum development.

Generally, the Instructional Systems Design Model is comprised of the following five interrelated phases: Analysis, Design, Development, Delivery (Implementation), and Evaluation. Each of these phases is comprised of elements. Figure 2 illustrates the relationship between these phases. A brief description of the phases and elements in the proposed SIAST curriculum process follows.

Five Interrelated Phases of SIAST's Curriculum Process

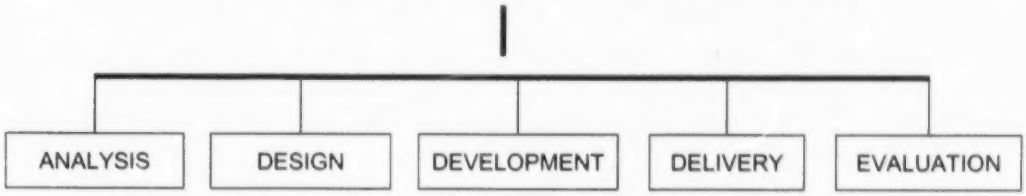


Figure 2 – Instructional Systems Design

Phase 1 – Curriculum Analysis

The purpose of the *Curriculum Analysis* phase is to collect and analyse information that will guide the design and development of the training program. Figure 3 highlights the elements within the *Curriculum Analysis* phase. While each of these elements has been separated for the purpose of description, in practice the individual elements interact with each other and often proceed concurrently.

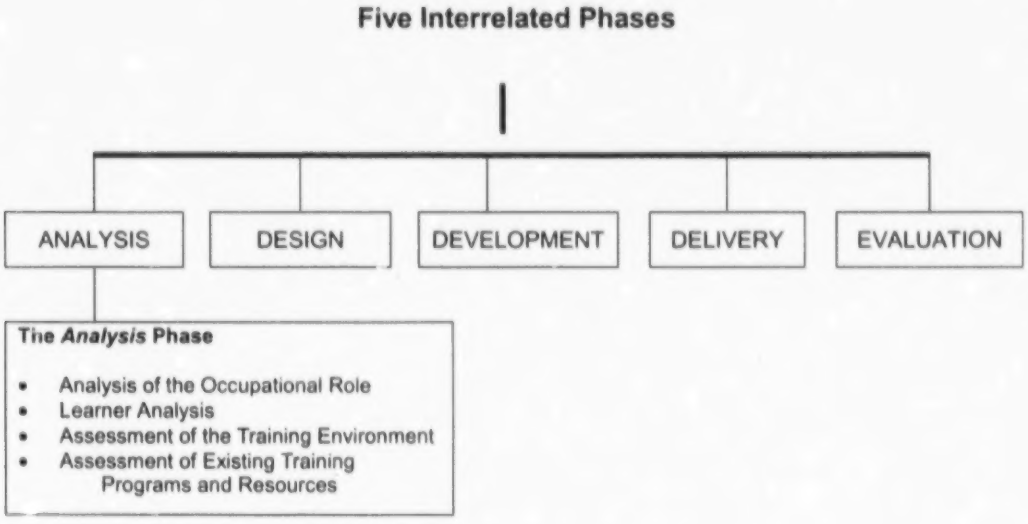


Figure 3 – The *Analysis* Phase of Instructional Systems Design

1.1 Analysis of the Occupational Role

The ultimate purpose of a training program is to enable students to perform an entry-level occupational role according to the standards set by industry. Therefore, it is essential to base the curriculum on a valid analysis of the corresponding occupational role. While a variety of techniques can be used in this phase, certain features are essential. First, the analysis identifies the general areas of responsibility within the occupational role, as well as the specific tasks that a practitioner is expected to perform. In addition to these occupationally specific skills, the analysis also identifies the employability skills that are necessary for current and future success in the workplace. It is crucial that authoritative representatives of industry participate in conducting and, if necessary, validating the analysis of the occupational role.

1.2 Learner Analysis

Learner analysis involves collecting information about the likely participants in the training program. The analysis provides answers to such questions as the following: Where do the learners live? Are they available for full- or part-time studies? What are their basic educational skills? Do they prefer certain program delivery methods? What are their demographic characteristics? The purpose of learner analysis is to ensure that the training program will be suited to the particular needs and interests of the target audience.

1.3 Assessment of the Training Environment

This element in the analysis phase is closely related to the learner analysis element. Essentially the assessment of the training environment identifies where and how learners will receive training. Will students participate in group instructional activities, study print-based modules, interact with CD-ROM delivered multimedia instruction, access web-based training, or some combination of these? Will students attend one of SIAST's campuses, participate in extension programming, learn through on-the-job training, or study at home? The answers to these questions are relevant to the selection and design of instructional methods and media.

1.4 Assessment of Existing Training Programs and Resources

This involves researching information about existing training programs, inside and outside of SIAST, that are similar, in whole or in part, to the program that is being contemplated. This includes determining whether there are existing instructional resources that might be purchased and adapted by SIAST in designing and developing the "new" program. The purpose of this element in the design phase is to save development time and money by avoiding the error of "reinventing the wheel."

Phase 2 - Design

The purpose of the *Design* phase is to produce a detailed plan that will guide the development of both the instruction and assessment in the training program. Design activities are based directly on the information collected during the *Analysis* phase and form the blueprint for the *Development* phase. Figure 4 highlights the elements within the *Design* phase.

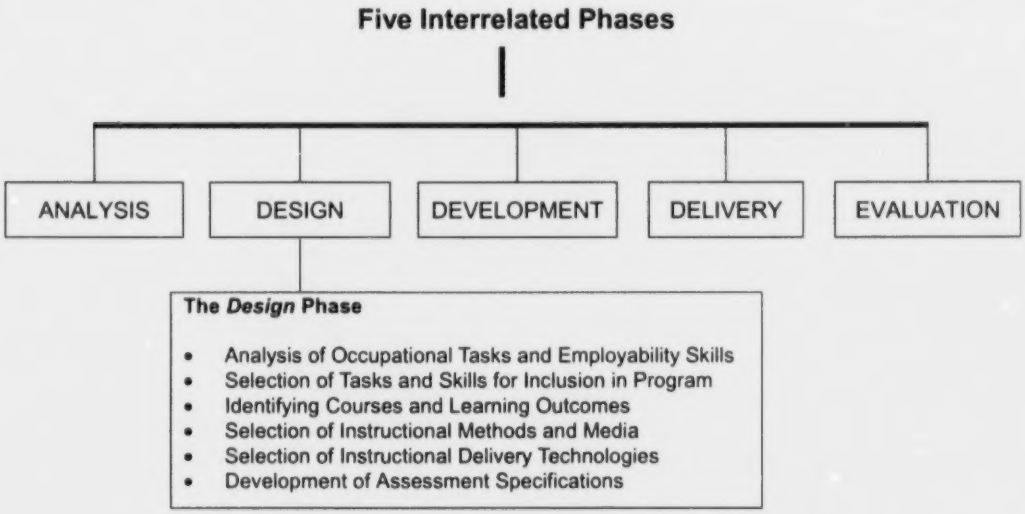


Figure 4 – The *Design* Phase of Instructional Systems Design

2.1 Analysis of Occupational Tasks and Employability Skills

During the *Analysis* phase, the occupational role was analysed to list the occupational tasks performed by a practitioner, along with the associated employability skills. The listing of tasks and employability skills is not sufficiently detailed to guide the curriculum development process. During this part of the design phase, each item on the list is analysed to determine the knowledge, skills, and attitudes required to perform the task or demonstrate the employability skill.

2.2 Selection of Tasks and Skills for Inclusion in Program

There may not be enough time within the allotted program length to teach all of the occupational tasks and employability skills identified during the *Analysis* phase. During this part of the *Design* phase, the highest priority tasks and skills that can be taught within the allotted program length are selected for inclusion in the program.

2.3 Identifying Courses and Learning Outcomes

During this part of the *Design* phase, the selected occupational knowledge, tasks and employability skills are assigned to logical groups. In SIAST terminology, each group is referred to as a course. Each of the individual occupational knowledge, tasks and related employability skills assigned to a particular group is referred to as a learning outcome. To focus the instruction on occupational role performance, most learning outcomes will be based on specific occupational skills, knowledge or attitudes, as well as general employability skills, knowledge or attitudes. Specifying the learning outcomes for each course will facilitate the implementation of prior learning assessment and credit transfer, internally as well as externally. As a result, each learning outcome could be assessed and documented in the student record, contributing to the course cumulative assessment.

For each learning outcome in a course, learning steps may also be determined at this stage. As stated earlier, learning steps are used to organize the delivery of the learning outcomes. There is no formal tracking of any assessment of learning steps.

To facilitate program administration, and to enable students to proceed through the instruction in manageable segments, it may be useful for a program to require a standardized length of time for completion of a course. Another option is to have courses comprised of consistent credit units that are multiples of a base unit. For example, if the base unit (one credit unit) is 25 hours of theory and practice instruction, then courses would only be 25 hours in length or multiples of 25 hours for mixed instruction (theory & practice).

2.4 Selection of Instructional Methods and Media

For each learning outcome, specific instructional methods and media are selected. To accommodate diverse learning styles and instructional content, it is appropriate to employ a wide range of methods and media. The choice of methods and media for a specific learning objective can be guided by such factors as the type of learning required, the logistics of implementation, learner preferences, etc.

2.5 Selection of Instructional Delivery Technologies

For each learning outcome, one or more delivery technologies are selected. Delivery technologies include instructor led training, print-based modules, instructional videotapes, CD ROM-delivered multimedia, web-based training, etc. The selection of delivery technologies is heavily influenced by the selection of instructional methods and media.

2.6 Development of Assessment Specifications

For each learning outcome, assessment activities and tools are planned. These activities and tools are expected to assess the knowledge, skill, or attitude in the corresponding outcome statement. Objective knowledge items, subjective knowledge items, performance tests, attitudinal measures and authentic assessments, such as learning journals, portfolios, and work placements, are all appropriate means of assessment. Assessments can be conducted through direct observation of student performance, paper and pencil tests, or computer administered tests.

Phase 3 - Development

The purpose of the *Development* phase is to select and/or develop any instructional and assessment materials that will be used during the delivery of the program. The development of these materials is based directly on the decisions made during the *Design* phase. Figure 5 highlights the elements within the *Development* phase.

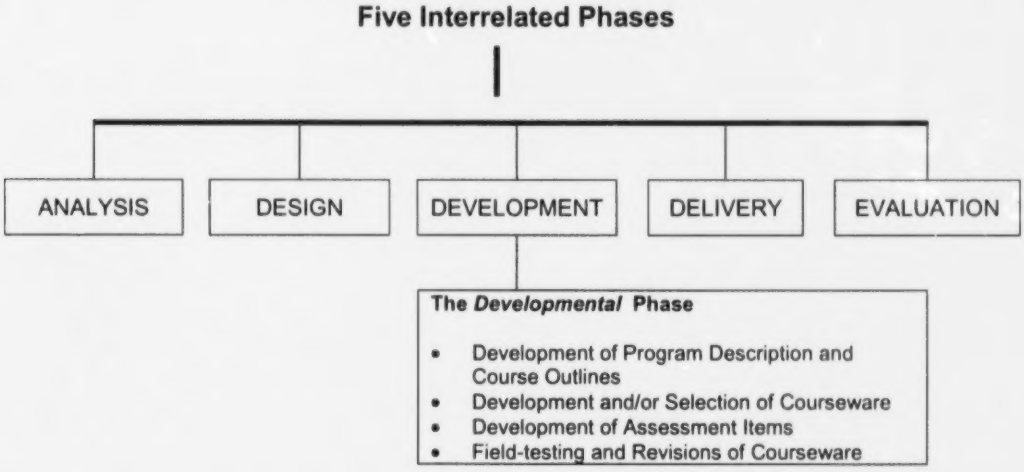


Figure 5 – The *Development* Phase of Instructional Systems Design

3.1 Development of Program Description and Course Outlines

Each program is briefly described to provide an overview of its purpose and goals. For each course, the learning outcomes are listed, along with a brief description of the method of delivery and instructional resources.

3.2 Development and/or Selection of Courseware

A wide range of courseware may be required, depending on the delivery technologies that were selected during the *Design* phase. Much of this material may be available for purchase by SIAST, thereby saving development time and money. In such situations, it is necessary to carefully select the courseware to match the learning objectives, characteristics of the learners, and delivery technologies. In other instances, it will be necessary to produce courseware. For instructor-led

training, lesson plans, student assignment sheets, handouts, etc. may be appropriate. For print-based instruction, instructional modules, including graphics, will need to be developed. If instructional videotapes are one of the delivery technologies, the video scripts and tapes will need to be produced. Computer-based courseware, such as CD-ROMs and web-based instruction, may also need to be developed.

3.3 Development of Assessment Items

A variety of assessment items will need to be developed to determine the extent to which students have achieved the learning outcomes. It is important that these items be developed according to the specifications established during the *Design* phase.

3.4 Field-Testing and Revision of Courseware

Time permitting, it is useful to field-test courseware, in draft form, on a small number of students before delivering the instruction to the larger student population. Revising courseware on the basis of this type of formative evaluation has been shown to significantly improve the quality of instructional materials.

Phase 4 - Delivery

The *Delivery* phase consists of the actual implementation of the instruction and assessment. Figure 6 highlights the elements within the *Delivery* phase.

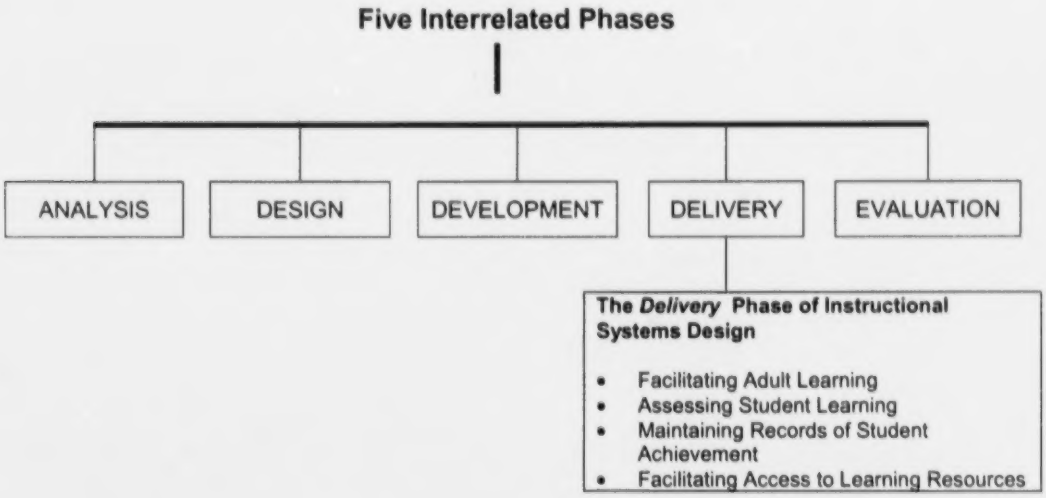


Figure 6 – The *Delivery* Phase of Instructional Systems Design

4.1 Facilitating Adult Learning

This element encompasses a wide range of activities whereby SIAST's professional educators motivate and assist their adult clients to achieve their learning objectives. It includes such activities as respecting the characteristics of adult learners, offering both direct and indirect instruction, providing remedial learning activities, counselling students, promoting lifelong learning, etc.

4.2 Assessing Student Learning

Generally, two broad categories of student learning are assessed within SIAST: learning that has occurred prior to instruction at SIAST and learning that has occurred as a result of instruction at our Institute. SIAST has adopted strategies for prior learning assessment, whereby students may receive credit for demonstrated learning that has occurred prior to entering our Institute. In addition, SIAST evaluates the learning that occurs as a result of instruction by means of a variety of knowledge, performance, attitudinal and authentic assessment procedures.

4.3 Maintaining Records of Student Achievement

This involves maintaining records of student progress during their training programs so that students receive the necessary guidance and support to succeed. It also involves granting credit for courses that students have successfully completed. The minimal level of credit is currently at the learning course level. As the system develops, credit may be granted at the outcome level.

4.4 Facilitating Access to Learning Resources

This involves guiding students in the use of both the physical and informational resources necessary to enable learning. It involves the appropriate use of tools, equipment, materials, and supplies related to the occupational role in which students are being trained. Increasingly, it also entails coaching students in finding, using, and evaluating information from resources such as the Internet, databases, and print-based libraries.

Phase 5 - Evaluation

During the *Evaluation* phase, information is collected for the purposes of improving the quality of the program, ensuring relevancy of programs to labour market needs and facilitating planning, budgeting and decision-making. At SIAST, program evaluation is an ongoing process that includes a variety of formal and informal activities. These include student and graduate surveys, annual program reviews, advisory board and committee meetings, day-to-day consultations with students, etc. Figure 7 highlights the elements within the *Evaluation* phase.

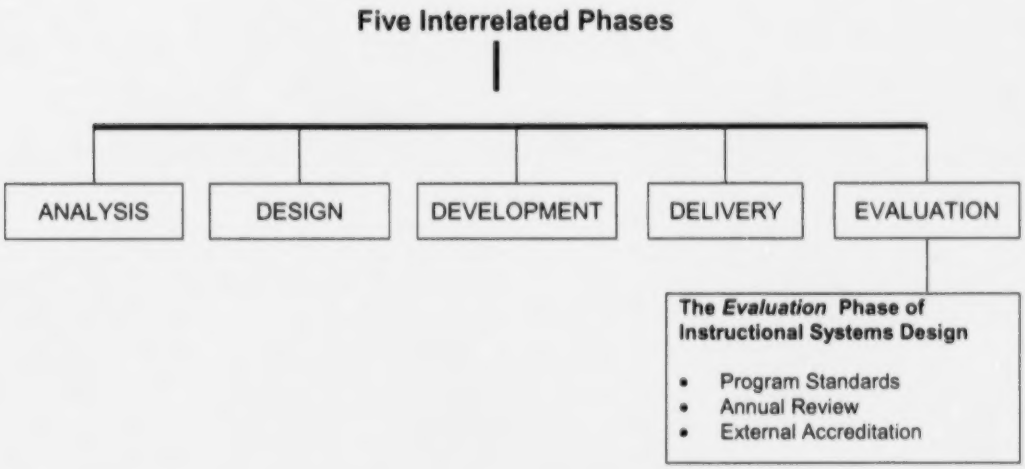


Figure 7 – The *Evaluation* Phase of Instructional Systems Design

5.1 Program Standards

What is a good program? A key element of program renewal is a set of clear quality standards for a program. (The basis for these standards exists in the program review indicators of success. However, these need to be revised to be more useful as program standards.) This provides a means to compare the processes and outcomes of a program with an objective standard. Based on this, strengths and areas for improvement can both be identified. As a result, recognition can be given for strengths and also recommendations can be made for making improvements.

5.2 Annual Review

Key Indicators

Certain information can be collected annually and provided to the program for on-going improvements. This can include student feedback, graduate employment statistics, program advisory committees' perceptions, labour market trends, etc.

Each SIAST credential program (except Applied Certificate programs) will receive an annual report on some key indicators that have readily available quantifiable data. This report will include an assessment of the program's results based on the standard for each indicator.

The key indicators can focus on: applications, equity targets, program success (completion rates), graduate employment (including preparation for employment), student and graduate satisfaction.

The data for this annual review will come from registration data on BANNER, data from the annual Graduate Employment Statistics report (GES), and from an annual student questionnaire conducted for all programs (as is currently done).

Self Assessment

Each year, programs would also go through a process of reflection and self assessment. This self assessment would be monitored by the Deans. This process would be guided by the remaining key factors of a quality program.

These factors include:

- Inputs such as: admission, student recruitment, program need, resources (facilities, equipment), and advisory body functioning.
- Teaching/Learning Process: learning outcomes, program content, instruction, student assessment, learning environment, program structure/organization, program collaboration.
- Outcomes: growth/renewal, response to industry changes (relevance), stakeholder satisfaction, etc.

Together, the annual review of key indicators and the self assessment will replace the previous five year comprehensive program review. As well, programs can do other optional and more comprehensive data collection to assist them in their efforts to improve. A new program will still likely need to do a comprehensive review that uses an external committee to examine the data and make recommendations for improvements.

Optional Activities Based on Program Need

Each year, programs will have the opportunity to gather more information about their program curriculum or activities to assist them in their overall evaluation. This will be available through a system based on request and divisional priorities. A request could be based on concerns raised in the annual review, or by a stakeholder group such as an advisory body or students. As well, programs in their self assessment may identify areas that need more information.

The following are examples of types of activities that can be conducted based on the priorities of divisions and available resources: focus groups with students or graduates, curriculum validation with employers, surveys of specific stakeholders, labour market analysis, etc.

5.3 External Accreditation

Many programs have an external accreditation in which the program is examined, every five to seven years, by an external body with a set of standards to meet. The annual review will work in a complementary fashion with the accreditation process. For example, a program could examine some aspects that are not covered by the accreditation in its self assessment or in some other optional review related activity.

Appendix A: Relationships between Elements: Clustering, Coring, and Standardization

The SIAST curriculum structure provides all the necessary elements of a program curriculum. These elements include:

- Programs
- Courses
- Learning Outcomes
- Learning Steps (activities, resources)

Curriculum development represents a major investment for SIAST. This curriculum model supports the effective use of curriculum. For example, curriculum can be shared between programs through clustering, coring and standardizing by providing a structure and language that can facilitate those aspects of program management. In a previous document, "Program Clustering, Coring, and Standardization" the various aspects of these elements are outlined and examples are provided. This appendix briefly summarizes the key aspects.

CLUSTERING

Clustering is used with programs, not courses, and involves the following:

- grouping of programs with similar occupational outcomes or for grouping programs which train for different occupations in a career field;
- based primarily on providing more efficient learning to students with similar course content requirements;
- may lead to coring, but coring is not a necessary condition of clustering.

CORING

Coring relates to how courses are shared between programs in terms of the following factors:

- the learning outcomes of similar programs are organized and delivered as a common course - to share common instructional resources;
- this common course will have the same BANNER code in each of the programs;
- cored courses may either be taught independently to students in each program, or taught to students of more than one program at the same time as long as acceptable student/instructor ratios are observed.

COMMON CURRICULA

Common curricula refers to the use of the same curricula among different programs. It also refers to the use of the same model (structure and process) to develop curriculum. The benefits include:

- the articulation and communication of shared vision and values;
- the establishment of standards for program evaluation;
- the simplification and clarification of organizational processes;
- the effective use of resources.

STANDARDIZATION

Standardization:

- applies to programs delivered at more than one campus;
- refers to pre-determined standards of academic rigor and skills mastery in the curriculum, at the same time as achieving consistency in all the key elements of courses and programs that are equivalent and train students for similar skills;
- refers to similar learning **outcomes**; same exit **credential**; same program **names**;
- does not refer to delivery methods as methods may vary according to approach used.

STANDARDIZED PROGRAMS

Standardized programs will exhibit these qualities:

- the programs have identical common elements, such as: entrance requirements, courses, learning outcomes, credit units, graduation requirements, program and course titles;
- the programs have the same number of total credits and usually the same length if traditionally delivered programs;
- other delivery modes, such as on-line, CBE, extension programs, may have different lengths as long as the number of credits of the program are the same;
- with the common curriculum, some variation, differentiation or specialization is possible; for example, programs will have the same courses for a minimum of 80% of the current credit units for the entire program, the other 20% may differ.

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